

Asian Longhorned Beetle Detection in Sacramento, California

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Abstract

The Asian longhorned beetle (ALB), *Anoplophora glabripennis* Motschulsky, a voracious pest of hardwood trees, was discovered on the grounds of a warehouse on McClellan Air Force Base, in Sacramento, CA on June 16, 2005. The beetle is native to China and Korea and has forced the removal of thousands of trees in Illinois, New Jersey, New York and Ontario, Canada.

The California Department of Food and Agriculture (CDFA) and Sacramento County Agricultural Commissioner's Office investigated the site and found a total of three Asian longhorned beetles. A live adult beetle was captured outside on the loading dock and two adults were found in the warehouse. Further investigation of the warehouse turned up wooden pallets with beetle damage. ALB has been found inside California warehouses before, however this is the first time that the beetle has been found outdoors. The new outdoor find prompted officials to respond quickly by fumigating the warehouse and inspecting nearby street trees for signs of beetle activity. Smokejumpers from Redding, CA climbed trees in search of beetle activity. A scientific advisory panel was convened to help strategize the State's extended response to the potential threat. The panel provided trapping, survey and treatment recommendations for the McClellan site and also storage facilities in San Diego and Los Angeles Counties owned by the same company. Survey and treatment procedures will continue for the next few years at these locations.

Survey

- Trace forwards of about 93 sites having been identified as receiving suspect materials are complete.

- Approximately 8,400 ALB host trees and 22,770 non-host trees are in the 9-square mile survey area.

- CDFA ground crews have surveyed area host trees at least 3 times since June, 2005.

- Forest Service smokejumpers from Redding, CA climbed trees in the Summer of 2005 and Spring of 2006 to search for beetle damage.

- Host trees have been surveyed at least 3 times in the 9-square survey area; none of which showed any signs of ALB infestation.

- Survey and public outreach will continue through 2008

- Platanus* is the most common ALB host genus in McClellan (Figure 1).

- 5,322 commercial, vacant and residential properties in the 9-square mile survey area.

- Trap trees (*Acer mono* (=pictum) or *A. truncatum*) treated with micro encapsulated Lambda-cyhalothrin have been deployed in the 1/4 mile-radius core.

Treatment

- 215 host trees in 1/4 mile radius treatment area were treated with imidacloprid between March 15th and April 26th, 2006.

- 190 trees were treated on 30 properties with Merit 75 WP (Imidacloprid) soil injection. 6 properties were residential and the others were either vacant lots or large commercial sites.

- Trees on 5 properties could not be treated by soil injection due to high water levels or access issues.

- On April 5th, Sacramento County under the supervision of Phil Lewis, PhD., USDA/APHIS, treated 9 host trees on 4 properties with Imicide (Imidacloprid) trunk injection. Remaining trunk injection treatments were completed on April 26.

- Leaf and twig samples will be taken of various tree types, DBH, and treatment types to determine the concentration and dispersal of imidacloprid in the treated trees. Phil Lewis will conduct the analysis.



Live adult Asian longhorned beetle found at a warehouse in McClellan, CA. Photo: Tim Larson, CDFA



Wooden pallet with exit hole. Photo: Tim Larson, CDFA



California smokejumper Bob Bente climbs a hackberry to look for the Asian longhorned beetle. Photo: Michael Bohne, Forest Service.

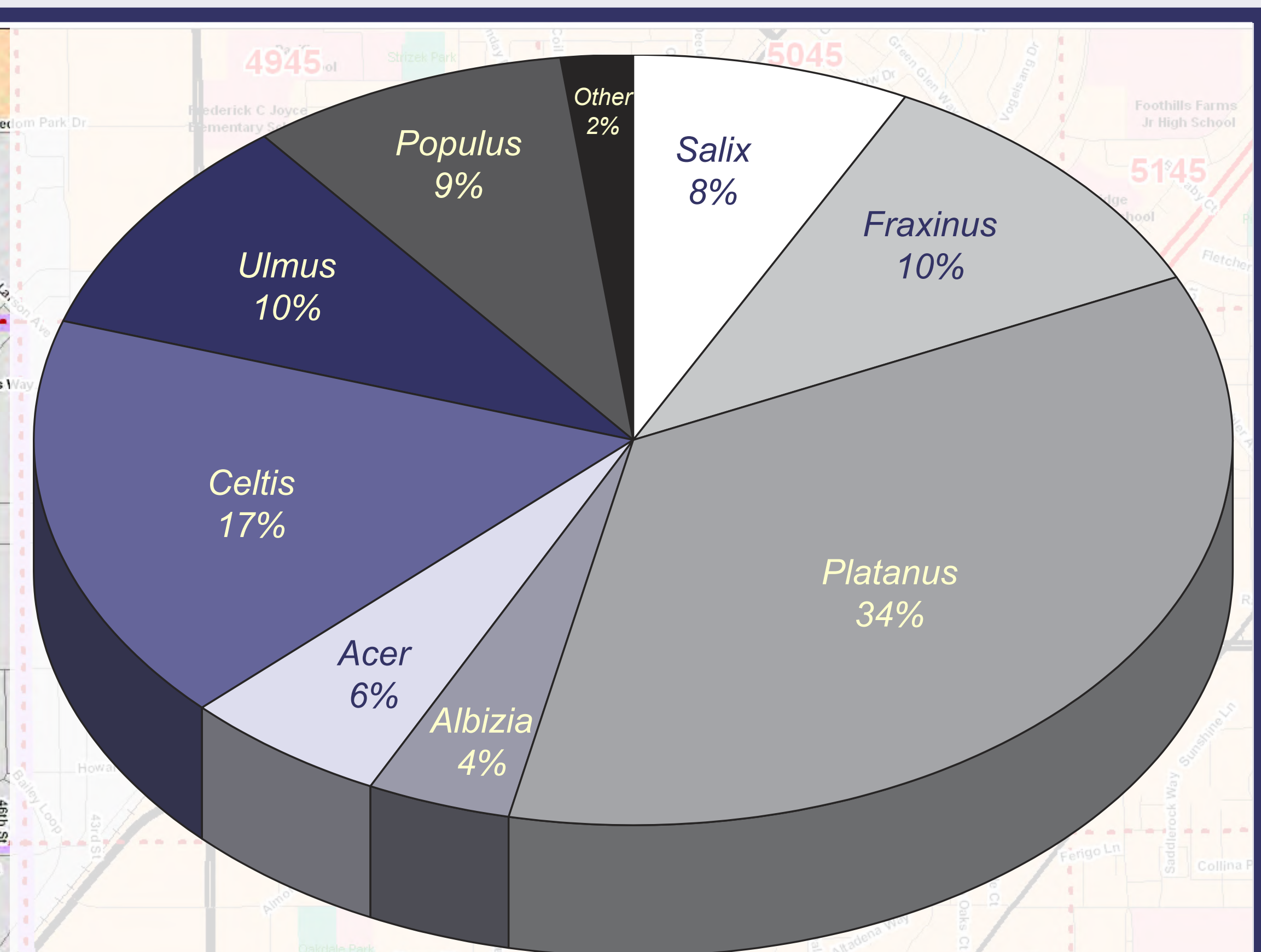
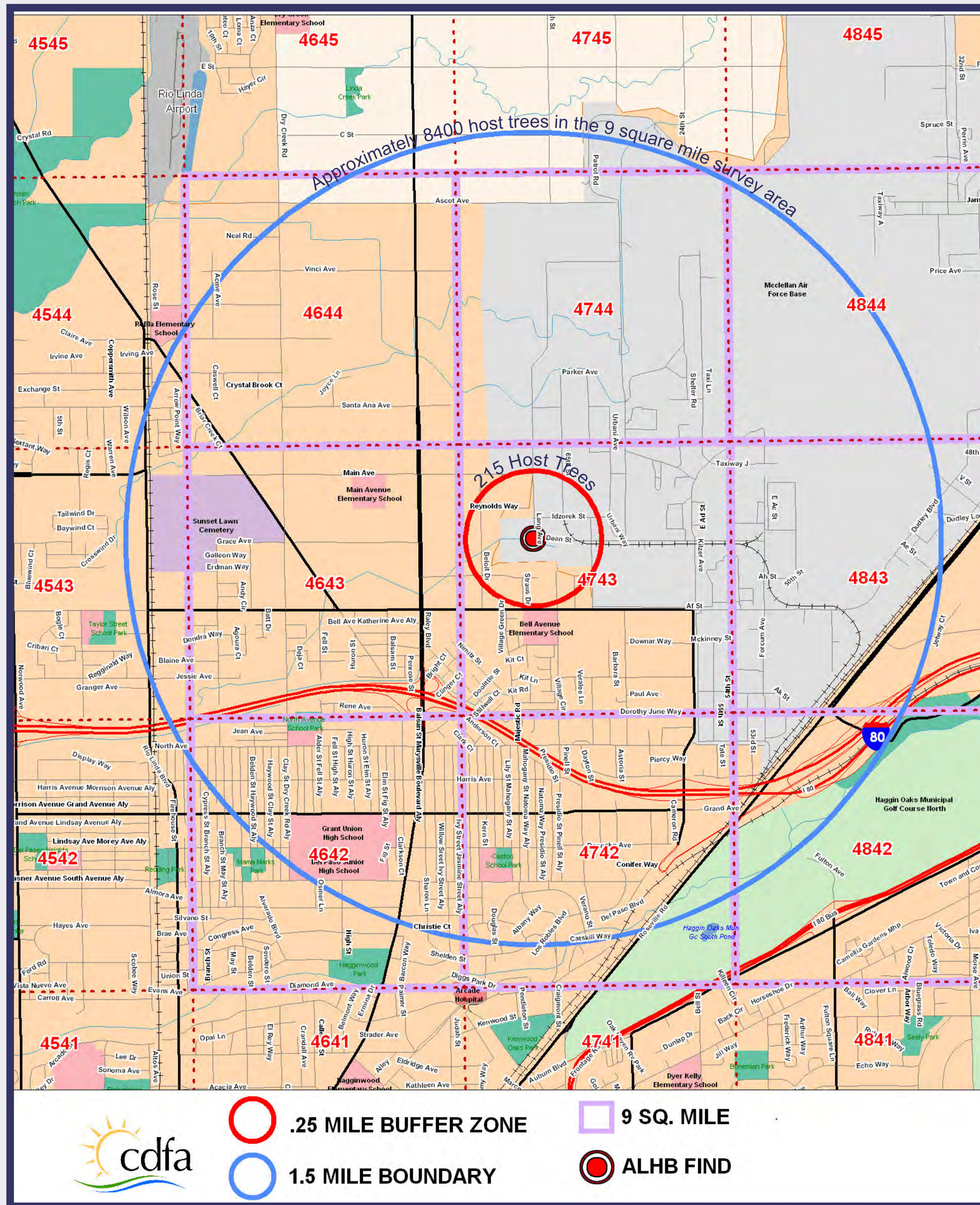


Figure 1. Percent of Asian longhorned beetle host trees in the 9-square mile survey area.

Quick Stats

- 3 beetles detected at a warehouse on June 16, 2005.
- Warehouse fumigated within days of the find.
- 215 host trees within the 1/4 mile radius; over 8,400 host trees within the 9-square mile area.
- Host trees have been surveyed at least 3 times by CDFA inspectors and USFS smokejumpers since June, 2005.
- Scientific Advisory Panel met August 16-17, 2005.
- 215 trees within the 1/4 mile radius were treated with imidacloprid between March 15 and April 26, 2006.
- Sentinel trees treated with knockdown insecticide were deployed within the 1/4 mile radius.
- Outreach cooperative coordinating ALB information to the media and public.

Map and data courtesy John Pozzi and Tim Larson, California Department of Food and Agriculture.

Research

- Common California urban trees, for which there is no information on ALB susceptibility, were screened for the ability of adults to use them as a food source and for oviposition by Melody Keena.
- Olea europea*, *Quercus lobata*, *Eucalyptus globulus* and *Platanus racemosa* were compared to *Acer platanoides* (a preferred host) by placing 10 mated pairs on each host for two weeks (changing host material weekly).
- Host samples were collected from William Land Park in Sacramento, by Mike Butcher, Arborist - City of Sacramento.

Summary data for ten <i>Anoplophora glabripennis</i> pairs held on each host for two weeks					
Data	<i>Acer</i>	<i>Eucalyptus</i>	<i>Quercus</i>	<i>Olea</i>	<i>Platanus</i>
Average number of pits chewed per female	7.7	0.0	0.1	0.3	0.2
Average number of eggs laid per female	10.8	0.2	3.4	1.8	0.0
Total eggs laid on host	226	3	68	18	0
Percentage hatch of eggs	74%	100%	85%	94%	---
Percentage adult mortality	0	65	1	65	10



Oviposition sites chewed by *A. glabripennis* on common olive (*Olea europaea*) and valley oak (*Quercus lobata*). Photo: Melody Keena, Forest Service.

Outreach

- CDFA established toll-free ALB hotline and website: 800.491.1899 www.cdca.ca.gov
- Western Integrated Pest Management Center (WIPMC), University of California at Davis coordinating regional public outreach.
- WIPMC produced regional pest alert, slideshow and website: www.wrpmc.ucdavis.edu
- WIPMC information was published on nearly 20 other Web sites and/or trade publications.
- National Forest System targeted outreach through Forest Health Protection.

Regional Pest Alert

Asian Longhorned Beetle

Anoplophora glabripennis

Origin and Distribution

The Asian longhorned beetle (ALB), native to China and Korea, was first discovered in the United States in 1996 on Long Island, New York. Several infestations were reported in Chicago, Illinois in 1998. Infestations in New York, Illinois, and New Jersey have resulted in the removal of thousands of trees and cost over \$100 million in damages. The beetle has been found in the United States, frequently transported from Asia or elsewhere in wood packing materials. The beetle poses a serious threat to healthy trees in the past decade. Asian longhorned beetles have been reported in the western regions of the United States made or near warehouses in Hawthorne, Los Angeles, South Gate, and Sacramento, California, and in Bellingham and Seattle, Washington.

Description

The Asian longhorned beetle is about 1 to 1.5 inches long with irregular staid and striped white spots. Its black and white head has a small horn-like structure. The antennae are long and segmented. The beetle has a white and black striped pattern on its body. The beetle has a white and black striped pattern on its body. The beetle has a white and black striped pattern on its body.

Damage

The Asian longhorned beetle has been found in healthy hardwood trees such as maple, birch, beech, and poplar. The beetle has a white and black striped pattern on its body. The beetle has a white and black striped pattern on its body. The beetle has a white and black striped pattern on its body.

ASIAN LONGHORNED BEETLE IN CALIFORNIA!

The Asian longhorned beetle (ALB), a voracious pest of hardwood trees, was discovered on the grounds of a warehouse on McClellan Air Force Base, near Sacramento, on June 16, 2005. Officials are concerned that this destructive invader, which has forced the removal of thousands of trees in Illinois, New Jersey and New York, will become established in California.

The ALB is about 1 to 1 1/2 inches long and has a shiny jet black body with distinctive white spots and long antennae that are banded with black and white. The beetle bores into healthy hardwood trees and feeds on cambial and structural tissue during the larval stage. Adult beetles emerge from exit holes and briefly feed on the small twigs and leaves of host trees. Susceptible hardwoods include maple, willow, elm, hackberry, sycamore, hackberry, birch, poplar, ash, mimosa and European mountain ash.

State and Federal officials have launched an awareness campaign and are asking for public assistance to search for the distinct looking beetle. **California National Forests may receive beetle sightings in response to the media attention.** Report suspicious beetles to the California Department of Food and Agriculture at:

(800) 491-1899 or www.cdca.ca.gov

Or contact your Shared Service Area Entomologist

Adult Asian longhorned beetles (photos courtesy of Melody Keena)

Attention District Forests!